

June 08, 2018

Derek Ingram
XDD, LLC
11171 Forest Haven Road
Festus, MO 63028
TEL: (314) 609-3065
FAX:



RE: Huster Road Substation Waste Water

WorkOrder: 18060312

Dear Derek Ingram:

TEKLAB, INC received 3 samples on 6/5/2018 5:15:00 PM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Michael L. Austin
Project Manager
(618)344-1004 ex 16
MAustin@teklabinc.com

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

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Client: XDD, LLC**Work Order:** 18060312**Client Project:** Huster Road Substation Waste Water**Report Date:** 08-Jun-18**Abbr Definition**

- * Analytes on report marked with an asterisk are not NELAP accredited
- CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
- CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
- DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
- DNI Did not ignite
- DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
- ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
- IDPH IL Dept. of Public Health
- LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
- LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
- MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
- MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
- MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
- MW Molecular weight
- ND Not Detected at the Reporting Limit
- NELAP NELAP Accredited
- PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
- RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
- RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
- SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
- Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
- TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
- TNTC Too numerous to count (> 200 CFU)

Qualifiers

- | | |
|--|--|
| # - Unknown hydrocarbon | B - Analyte detected in associated Method Blank |
| C - RL shown is a Client Requested Quantitation Limit | E - Value above quantitation range |
| H - Holding times exceeded | I - Associated internal standard was outside method criteria |
| M - Manual Integration used to determine area response | ND - Not Detected at the Reporting Limit |
| R - RPD outside accepted recovery limits | S - Spike Recovery outside recovery limits |
| T - TIC(Tentatively identified compound) | X - Value exceeds Maximum Contaminant Level |



Case Narrative

<http://www.teklabinc.com/>

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

Cooler Receipt Temp: 18.42 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425
Phone (618) 344-1004
Fax (618) 344-1005
Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415
Phone (217) 698-1004
Fax (217) 698-1005
Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515
Phone (630) 324-6855
Fax
Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214
Phone (913) 541-1998
Fax (913) 541-1998
Email jhriley@teklabinc.com

Client: XDD, LLC**Work Order:** 18060312**Client Project:** Huster Road Substation Waste Water**Report Date:** 08-Jun-18

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2019	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2019	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2018	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2018	Collinsville
Texas	TCEQ	T104704515-12-1	NELAP	7/31/2018	Collinsville
Arkansas	ADEQ	88-0966		3/14/2019	Collinsville
Illinois	IDPH	17584		5/31/2019	Collinsville
Indiana	ISDH	C-IL-06		1/31/2019	Collinsville
Kentucky	KDEP	98006		12/31/2018	Collinsville
Kentucky	UST	0073		1/31/2019	Collinsville
Louisiana	LDPH	LA170027		12/31/2018	Collinsville
Missouri	MDNR	930		1/31/2019	Collinsville
Missouri	MDNR	00930		5/31/2019	Collinsville
Oklahoma	ODEQ	9978		8/31/2018	Collinsville
Tennessee	TDEC	04905		1/31/2019	Collinsville

Client: XDD, LLC
 Client Project: Huster Road Substation Waste Water
 Lab ID: 18060312-001
 Matrix: WASTE WATER

Work Order: 18060312
 Report Date: 08-Jun-18

Client Sample ID: Influent

Collection Date: 06/05/2018 16:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)								
Iron	NELAP	0.0400		5.73	mg/L	1	06/06/2018 19:35	142570
<i>Sample result for Fe exceed 10 times the CCB. Data is reportable per the TNI Standard.</i>								
EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS								
cis-1,2-Dichloroethene	*	2.0		ND	µg/L	1	06/06/2018 12:12	142605
Tetrachloroethene	NELAP	0.50		ND	µg/L	1	06/06/2018 12:12	142605
Trichloroethene	NELAP	1.0		ND	µg/L	1	06/06/2018 12:12	142605
Vinyl chloride	NELAP	2.0		ND	µg/L	1	06/06/2018 12:12	142605
Surr: 1,2-Dichloroethane-d4	*	79.6-118		99.7	%REC	1	06/06/2018 12:12	142605
Surr: 4-Bromofluorobenzene	*	83.9-115		100.9	%REC	1	06/06/2018 12:12	142605
Surr: Dibromofluoromethane	*	84.9-113		99.3	%REC	1	06/06/2018 12:12	142605
Surr: Toluene-d8	*	86.7-112		98.4	%REC	1	06/06/2018 12:12	142605
<i>QCS recovered outside upper control limits tetrachloroethene. Sample results are below the reporting limit. Data is reportable per the TNI Standard.</i>								

Client: XDD, LLC
Client Project: Huster Road Substation Waste Water
Lab ID: 18060312-002
Matrix: WASTE WATER

Work Order: 18060312
Report Date: 08-Jun-18

Client Sample ID: Effluent

Collection Date: 06/05/2018 16:00

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED								
Lab pH	NELAP	1.00		8.12		1	06/07/2018 21:03	R248116
EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)								
Iron	NELAP	0.0400		5.16	mg/L	1	06/06/2018 19:46	142570
<i>Sample result for Fe exceed 10 times the CCB. Data is reportable per the TNI Standard.</i>								
EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS								
cis-1,2-Dichloroethene	*	2.0		ND	µg/L	1	06/06/2018 12:38	142605
Tetrachloroethene	NELAP	0.50		ND	µg/L	1	06/06/2018 12:38	142605
Trichloroethene	NELAP	1.0		ND	µg/L	1	06/06/2018 12:38	142605
Vinyl chloride	NELAP	2.0		ND	µg/L	1	06/06/2018 12:38	142605
Surr: 1,2-Dichloroethane-d4	*	79.6-118		101.2	%REC	1	06/06/2018 12:38	142605
Surr: 4-Bromofluorobenzene	*	83.9-115		101.2	%REC	1	06/06/2018 12:38	142605
Surr: Dibromofluoromethane	*	84.9-113		97.5	%REC	1	06/06/2018 12:38	142605
Surr: Toluene-d8	*	86.7-112		98.5	%REC	1	06/06/2018 12:38	142605
<i>QCS recovered outside upper control limits tetrachloroethene. Sample results are below the reporting limit. Data is reportable per the TNI Standard.</i>								

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

Lab ID: 18060312-003

Client Sample ID: Trip Blank

Matrix: TRIP BLANK

Collection Date: 06/05/2018 17:15

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS								
cis-1,2-Dichloroethene	*	2.0		ND	µg/L	1	06/06/2018 13:03	142605
Tetrachloroethene	NELAP	0.50		ND	µg/L	1	06/06/2018 13:03	142605
Trichloroethene	NELAP	1.0		ND	µg/L	1	06/06/2018 13:03	142605
Vinyl chloride	NELAP	2.0		ND	µg/L	1	06/06/2018 13:03	142605
Surr: 1,2-Dichloroethane-d4	*	79.6-118		99.5	%REC	1	06/06/2018 13:03	142605
Surr: 4-Bromofluorobenzene	*	83.9-115		102.0	%REC	1	06/06/2018 13:03	142605
Surr: Dibromofluoromethane	*	84.9-113		96.7	%REC	1	06/06/2018 13:03	142605
Surr: Toluene-d8	*	86.7-112		99.4	%REC	1	06/06/2018 13:03	142605

QCS recovered outside upper control limits tetrachloroethene. Sample results are below the reporting limit. Data is reportable per the TNI Standard.



Sample Summary

<http://www.teklabinc.com/>

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

Lab Sample ID	Client Sample ID	Matrix	Fractions	Collection Date
18060312-001	Influent	Waste Water	4	06/05/2018 16:15
18060312-002	Effluent	Waste Water	5	06/05/2018 16:00
18060312-003	Trip Blank	Trip Blank	1	06/05/2018 17:15

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

Sample ID	Client Sample ID	Collection Date	Received Date	Prep Date/Time	Analysis Date/Time
Test Name					
18060312-001A	Influent	06/05/2018 16:15	06/05/2018 17:15		
	EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)			06/05/2018 19:04	06/06/2018 19:35
18060312-001D	Influent	06/05/2018 16:15	06/05/2018 17:15		
	EPA 600 624 (Modified), Volatile Organic Compounds by GC/MS				06/06/2018 12:12
18060312-002A	Effluent	06/05/2018 16:00	06/05/2018 17:15		
	Standard Method 4500-H B 2000, Laboratory Analyzed				06/07/2018 21:03
18060312-002B	Effluent	06/05/2018 16:00	06/05/2018 17:15		
	EPA 600 4.1.4, 200.7R4.4, Metals by ICP (Total)			06/05/2018 19:04	06/06/2018 19:46
18060312-002E	Effluent	06/05/2018 16:00	06/05/2018 17:15		
	EPA 600 624 (Modified), Volatile Organic Compounds by GC/MS				06/06/2018 12:38
18060312-003A	Trip Blank	06/05/2018 17:15	06/05/2018 17:15		
	EPA 600 624 (Modified), Volatile Organic Compounds by GC/MS				06/06/2018 13:03

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

STANDARD METHOD 4500-H B 2000, LABORATORY ANALYZED

Batch R248116 SampID: LCS	SampType: LCS	Units							
									Date Analyzed
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Lab pH	1.00		7.00	7.000	0	100.0	99.1	100.8	06/07/2018

Batch R248116		SampType: DUP		Units				RPD Limit 10			
SampID: 18060312-002ADUP											
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
Lab pH		1.00		8.14				8.120	0.25	06/07/2018	

EPA 600 4.1.4, 200.7R4.4, METALS BY ICP (TOTAL)

Batch 142570		SampType: MBLK		Units mg/L						
SampID: MBLK-142570										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Iron		0.0400		< 0.0400	0.02000	0	0	-100	100	06/06/2018

Batch 142570		SampType: LCS		Units mg/L						
SampID: LCS-142570										Date Analyzed
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	
Iron		0.0400		1.95	2.000	0	97.4	85	115	06/06/2018

Batch 142570		SampType: MS		Units mg/L						
SampID: 18060312-001AMS										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Iron		0.0400		7.97	2.000	5.728	112.2	75	125	06/06/2018

Batch 142570		SampType: MSD		Units mg/L				RPD Limit 20		
SampID: 18060312-001AMSD										
Analyses		RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Iron		0.0400		8.16	2.000	5.728	121.4	7.973	2.26	06/06/2018

EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 142605		SampType: MBLK		Units µg/L						
SampID: MBLK-T180606A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
cis-1,2-Dichloroethene	2.0		ND						06/06/2018	
Tetrachloroethene	0.50		ND						06/06/2018	
Trichloroethene	2.0		ND						06/06/2018	
Vinyl chloride	2.0		ND						06/06/2018	
Surr: 1,2-Dichloroethane-d4			50	50.00		99.4	79.6	118	06/06/2018	
Surr: 4-Bromofluorobenzene			50	50.00		99.0	83.9	115	06/06/2018	
Surr: Dibromofluoromethane			49	50.00		98.7	84.9	113	06/06/2018	
Surr: Toluene-d8			49	50.00		98.3	86.7	112	06/06/2018	

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

EPA 600 624 (MODIFIED), VOLATILE ORGANIC COMPOUNDS BY GC/MS

Batch 142605		SampType: LCSD		Units µg/L				RPD Limit 40		
SampID: LCSD-T180606A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed	
cis-1,2-Dichloroethene	2.0		50	50.00	0	100.0	49.35	1.33	06/06/2018	
Tetrachloroethene	0.50		52	50.00	0	103.7	50.28	3.11	06/06/2018	
Trichloroethene	2.0		50	50.00	0	99.5	49.26	1.03	06/06/2018	
Vinyl chloride	2.0		37	50.00	0	74.0	37.42	1.10	06/06/2018	
Surr: 1,2-Dichloroethane-d4			48	50.00		96.9			06/06/2018	
Surr: 4-Bromofluorobenzene			49	50.00		98.8			06/06/2018	
Surr: Dibromofluoromethane			51	50.00		102.1			06/06/2018	
Surr: Toluene-d8			49	50.00		97.9			06/06/2018	

Batch 142605		SampType: LCS		Units µg/L						
SampID: LCS-T180606A-1										
Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed	
cis-1,2-Dichloroethene	2.0		49	50.00	0	98.7	77.3	118	06/06/2018	
Tetrachloroethene	0.50		50	50.00	0	100.6	75.5	119	06/06/2018	
Trichloroethene	2.0		49	50.00	0	98.5	75.7	123	06/06/2018	
Vinyl chloride	2.0		37	50.00	0	74.8	45.8	138	06/06/2018	
Surr: 1,2-Dichloroethane-d4			48	50.00		96.7	79.6	118	06/06/2018	
Surr: 4-Bromofluorobenzene			48	50.00		96.9	83.9	115	06/06/2018	
Surr: Dibromofluoromethane			51	50.00		101.7	84.9	113	06/06/2018	
Surr: Toluene-d8			49	50.00		98.2	86.7	112	06/06/2018	



Receiving Check List

<http://www.teklabinc.com/>

Client: XDD, LLC

Work Order: 18060312

Client Project: Huster Road Substation Waste Water

Report Date: 08-Jun-18

Carrier: Reginald Gardner

Received By: BV

Completed by:

Elizabeth A. Hurley

Reviewed by:

Marvin L. Darling II

On:

05-Jun-18

Elizabeth A. Hurley

On:

05-Jun-18

Marvin L. Darling

Pages to follow:

Chain of custody

1

Extra pages included

0

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Temp °C 18.42

Type of thermal preservation?

None ☐

Ice ☒

Blue Ice ☐

Dry Ice ☐

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☐

No ☒

Reported field parameters measured:

Field ☐

Lab ☒

NA ☐

Sample analyses to be measured in the field and/or within 15 minutes of collection were analyzed in the lab as soon as practicable. These analyses include Chlorine (demand, free and/or residual), Carbon Dioxide, Dissolved Oxygen, Ferrous Iron, pH, and Sulfite.

Container/Temp Blank temperature in compliance?

Yes ☒

No ☐

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?

Yes ☐

No ☒

No VOA vials ☐

Water - TOX containers have zero headspace?

Yes ☐

No ☐

No TOX containers ☒

Water - pH acceptable upon receipt?

Yes ☒

No ☐

NA ☐

NPDES/CWA TCN interferences checked/treated in the field?

Yes ☐

No ☐

NA ☒

Any No responses must be detailed below or on the COC.

Headspace was present in the Trip Blank volatile vials. Derek Ingram was notified of this error via work order summary. - ehurley - 6/5/2018 6:08:31 PM

Trip Blank collection date and time will be reported as the received date and time (end of trip). - ehurley - 6/5/2018 6:08:41 PM

pg. 1 of 1 Work order # 18060312

[illegible]

6/5/18